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GEOGRAPHIC INFORMATION SYSTEM (GIS) BASED  
ANAYTICAL HIERARCHY PROCESS (AHP) FOR LANDSLIDE  
HAZARD ZONES IN HULU LANGAT, SELANGOR

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COLLEGE OF BUILT ENVIRONMENT

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**Thesis submitted to the Universiti Teknologi MARA Malaysia  
in partial fulfilment for the award of the degree of the  
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## **AUTHOR'S DECLARATION**

I declare that the work on this project/dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA (UiTM). This project/dissertation is original and it is the result of my work, unless otherwise indicated or acknowledged as referenced work.

In the event that my project/dissertation be found to violate the conditions mentioned above, I voluntarily waive the right of conferment of my degree of the Bachelor of Surveying Science and Geomatics (Honours) and agree be subjected to the disciplinary rules and regulations of Universiti Teknologi MARA.

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## **ABSTRACT**

Malaysia has experienced rapid development in many sectors. The demand for land in areas such as industrial and residential areas would rise as a result of rapid economic growth. The desire for additional options, such as in mountainous places, has developed as a result of the shortage of flat ground areas, particularly in urban centers like Kuala Lumpur and Selangor. Particularly in hilly developing areas, landslides have resulted in a significant number of losses and damages. Both the 1993 and 2022 major landslide incidents at Highland Tower in Ampang served as wake-up calls for the federal government and local authorities to appropriately regulate hill slope development, especially in high-risk locations. Although there are various methods and criteria used to determine landslide hazard zones, it is unclear which criteria and models are appropriate to be used in the Malaysian government. The aim of this study is to classify the level of probability landslide hazard zonation using Multi-Criteria Decision Making (MCDM) in Hulu Langat, Selangor. This study covers areas of Hulu Langat, Selangor. One (1) technique in MCDM will be considered in this study that namely Analytical Hierarchical Process (AHP) is used to determine the weights for each of the parameter used. The weighted were calculated to generate and produce the classification of landslide hazard zones. As a conclusion, integration of GIS and MCDM can be an important technique to locate and map landslide hazard zones.

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